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Rail Road News.

Important Railroad Decision.

A very important Railroad decision has been made in a court in Virginia. The Portsmouth Roanake Railroad was attached by its creditors, sold at auction, and purchased by a Mr. Rives. He at once proceeded to take up the rails. On complaint, he was prosecuted for injury done to the Highway, and was fined. The court decided that a Railroad was granted by the Legislature as a public convenience, a Highway, and that neither the Company, nor individuals had a right to take up the rails, or take any measures that would prevent its use as a public road.

The celebration of the opening of the Chattanooga Railroad occurred at that place last week. The following toast was given at the celebration:

"The State of Tennessee: A co-operator in the grand event we commemorate, she acted well her part. With united hands, let Georgia and Tennessee join on this occasion in mingling the waters of the Atlantic and the Mississippi, here brought together by the Chief Engineer, as the organ of our State. With uplifted hands let these States hail the valley of the Mississippi, whilst Tennessee, with a noble and patriotic enterprise, shall open the way for us to the far West by Nashville, and shall establish a communication with the North through the valley of the Holston."

Erie Railroad.

The receipts of the Erie Railroad Co., for the first eleven months of the present year, amount to $715,000. The aggregate for the twelvemonth is estimated at near $800,000. The cars on this road are now running to Corning, and proposals are issued to construct it 42 miles further. Passengers are now taken by this road from Geneva, Ontario Co., to this city for $5—this will hurt the receipts of the Syracuse and Albany lines.

Watertown and Rome Railroad.

This railroad which opens up the communication North, in the Black River country, from Rome, Oneida Co., N. Y., with the Utica and Schenectady Railroad, is proceeding onward with fair prospects of success. About 1000 tons of iron will be in Rome, ready for it in the spring.

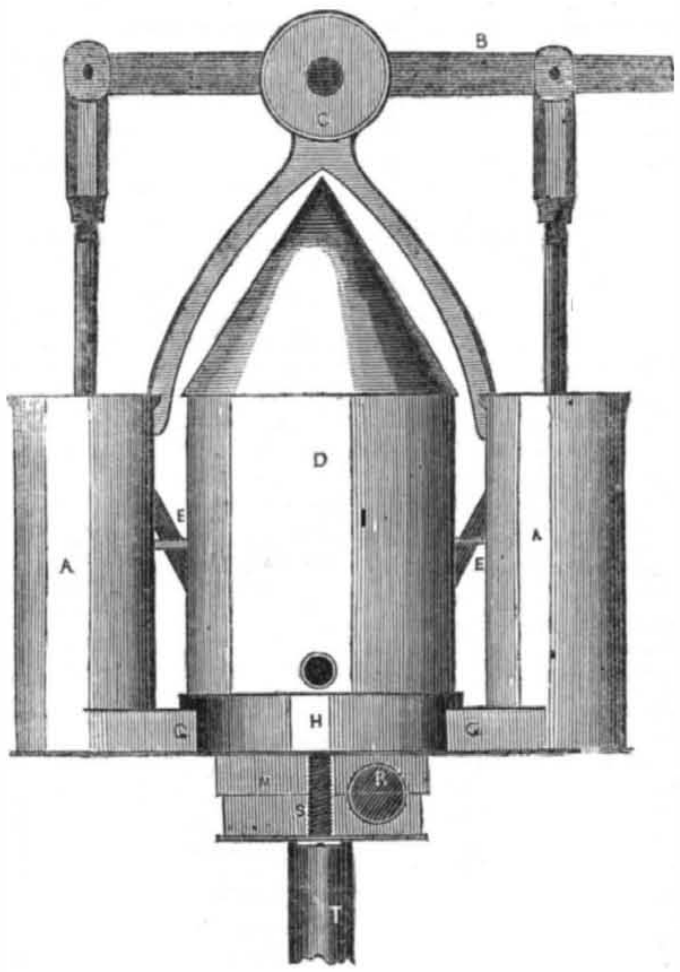
Francis Curtis, of Salem, Mass., has recovered a verdict for $5,000 against the Eastern Railroad Company, for injuries received through the neglience of their agent.

There is trouble at Hartford Conn. about the Canal Railroad.

Spots in the Sun.

A. Winchel, Esq., writing to the N. Y. Tribune, states that he saw a spot on the sun, with his naked eye, of 60,000 miles in diameter. If this is a hole in the sun's atmosphere, it could swallow up seven of our worlds. In 1836 four spots, nearly as large, could be seen with the naked eye. We saw them regularly every sunset, for more than a week.

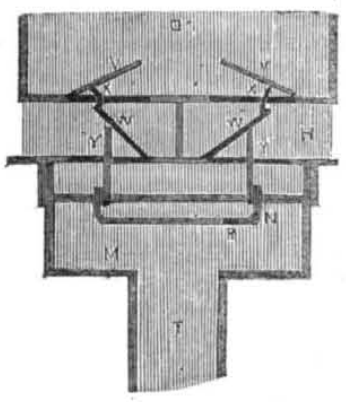
IMPROVEMENTS IN PUMPS.---Fig. 1.



The inventor of the improvements herein described, is Mr. D. L. Gibbs, of Manchester, N. H. Fig. 1 is a front elevation; fig. 2 is an interior view, or vertical section, and fig. 3 is a view of the plunger, showing the nut that tightens the packing, and a section of the shell. The same letters refer to like parts.

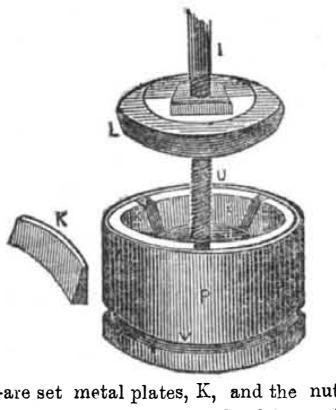
A A are the two pump cylinders; B is the pump lever; C the axis pin, passing through the steeple head; D is the air chamber; E E are two inclined ears, one on each cylinder, and one on each side of the air chamber.—There is a small space between these ears, into which are inserted wedges, which key the air chamber in its place—a convenient substitute for screw bolts. H is the lower valve chamber, (the upper valves open into the air chamber.) G G are the water ways to the cylinders. M is a small box or chamber attached by a screw, S, on each side, to the valve chamber. T is the suction pipe. The valves operate in the usual way, but there is a new mode of lifting them up when the pump has stopped working, to draw off the water in the pumps and air chamber, to prevent it from freezing. This is done by a small finger lever, R, fig. 1, being the handle, and R, fig. 2, showing where it is connected to N, an arm which is bent round an axis, and has two projecting fingers, Y Y. By pushing in the handle, R, the fingers, Y Y, project upwards and lift the lower valves, W W. They are formed with curved ends, which project through the upper openings, X X, and lift the upper valves V V; thus letting all the water above fall down below.

FIG. 2.



The plunger is peculiar in its construction: I is the pitman or piston rod. It is made with a screw, U, on its lower end, and with a cup of metal, J. The outside, P, is formed of an elastic substance, such as vulcanized india rubber, drawn over the cup, J, and forming a cylinder with a cress or groove, fig. 3, near its lower part, fitted into a groove in the cup, J, to prevent the india rubber being drawn out of place. Above the cup, J,—at the edge round about—are set metal plates, K, and the nut, L, is screwed down into the inside of the small plates, K, which form a stiff shell for the outside covering. As the nut, L, is of a conical form, the harder it is screwed down, the elastic substance P, is more pressed out—thus forming an exceedingly ingenious plan for adjusting the tightness of the packing—a plan which, to our knowledge, has not been brought into public notice before this. The piston rods are made to screw into shoulders, and thus all the parts are easily put together and taken apart, thereby rendering it very convenient as well as decidedly good in its operations.

FIG. 3.



Useful Receipts.

To make the best Beef Hams.

Take the hind quarter of a good fat animal, and make a cut down all the way into and the whole length of the bone: then cut out the bone, leaving the meat with one long cut into its centre—nearly resembling a split cylinder. Now lay it down in clean brine, of good salt, that has been boiled and skimmed, and into which there has been dissolved a little sugar. Let it remain in this brine for about ten days, at least do not let it get too salt. Then lift it out and hang it up on a hook to drip for about three days. Take it down when all the brine has dripped out of it, and lay it upon a table. Have ready a (very little) quantity of fine salt, mixed with considerable black pepper and ground cloves. Rub the meat by hand, both inside and out, with this mixture, and then have ready a ball of stout hempen cord or twine. Then roll the meat firmly round, making it into a conical shape. After this take the cord and commence at the thickest part of the meat, to roll it round, drawing it firmly every coil, having each coil wrapped and drawn firmly round at about one-fourth of an inch apart, up to the top or small end. The cord must then be laced down on both sides opposite, in such a way that each lower coil of cord may be cut without loosening the coil above it. This roll of beef is then the *ne plus ultra* of beef hams. It has but to be hung up for two or three days, and a slice of it (commencing to cut at the lower part) either broiled or fried, makes a dish fit to enchant an epicure. To cut it, the roll should be laid upon a table, and with a large sharp knife, it should be cut in thin round slices, and when enough for a meal is cut off, it should be hung up again. Hams should never be hung in a warm situation, but in a dry cool airy place. The fat and lean in this kind of ham is beautifully mixed in every slice. The seasonings assimilate themselves with the meat, and give it a very peculiar and agreeable flavor. Let those who make their own beef hams, try this method, and if they ever forget or neglect to do it afterwards, although it is a little more troublesome than smoking the beef, we are no judges of human nature.

French Waterproof Cloth or Silk.

The following is the process adopted by M. Collet:—Take 1 lb. of linseed oil, 1½ lb. of white lead, 1 oz. of umber, and a little garlic; boil these ingredients for 12 hours over a slow fire and when this composition acquires a skin upon its surface, it is fit for use. The cloth or silk is then to be immersed, being previously spread over a frame, then hung up to dry, and afterwards rubbed smooth with pumice stone.

The material is next to be coated with another composition, prepared in the following manner:—Take 1 lb. of linseed oil, 1 oz. litharge, 4 drachms of sulphate of zinc, and 4 oz. of white lead, calcined to a yellow colour: boil these in an iron pot until they assume the consistence of paste This preparation is then to be spread over the cloth on the side of it, and then dried in a heated chamber. For covering of silk this operation should be repeated. Oiled-skin cloth, perfectly flexible and waterproof, is thus produced.

To many of our subscribers, this rare receipt is worth ten times more than their year's subscription.

A watchmaker in Liverpool has succeeded in drilling a hole through a sixpence edgeways. The diameter of the hole in the coin is the four thousandth part of an inch in size, and barely sufficient to admit a fine hair.

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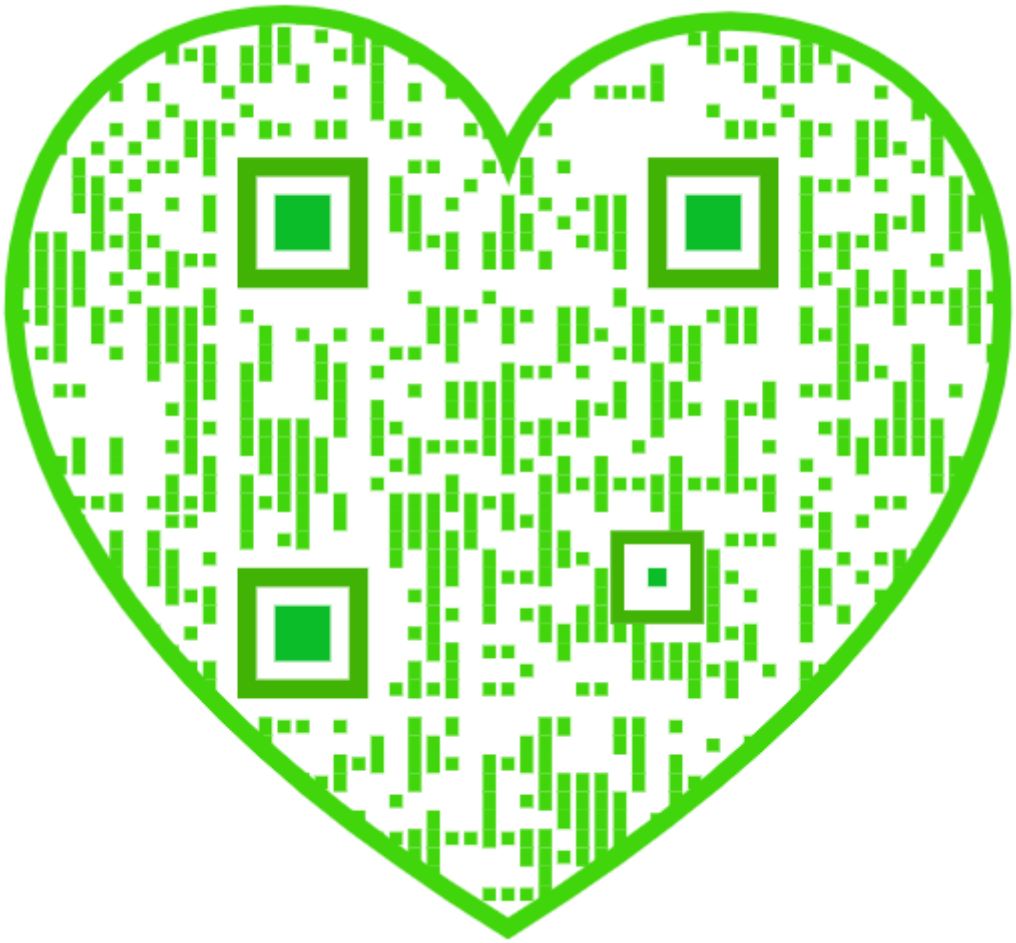

Miscellaneous.

Correspondence of the Scientific American.

WASHINGTON CITY, Dec. 18, 1849.

It is a matter of universal regret that at a time of excitement like the present, when all eyes are turned towards the Capitol, no successful plan has been discovered for protecting the telegraphic wires from the effects of the frequent storms. I conversed with a man this morning, who claims to have discovered a mode by which the wires, enclosed in gutta percha tubes, can be carried beneath the ground without any danger of interruption. He did not communicate the particulars of his plan, but it appears to me that there exists one insurmountable objection to this mode, which is, that should any malicious person destroy the connection, and afterwards replace the earth, the whole line would have to be uncovered before the precise faulty spot could be discovered. Your readers will recollect that Professor Morse commenced his line between this city and Baltimore upon a similar plan, but the above objection soon became so obvious that he immediately relinquished it.

I hear that one of the companies contemplate the erection of iron posts between this city and New York. These, although requiring a great outlay at first, would be the cheaper in the end; and if the profits for the next few years shall at all approach that of the past, the company can well afford the expense.

I see many of the papers are prophecying that the nomination of Mr. Ewbank, the present Commissioner of Patents, will be rejected. What particular objection there is to him I am not apprised, but if it be a mere party character, I trust the Senate will not be influenced by it. Of all other places under the Government I do not know of one which ought to be less trammelled by party considerations than that of Commissioner. A sound, practical scientific man of sufficient knowledge to protect the Department from imposition, whether Whig or Democrat, ought to be valued.

After Congress shall have organized, I learn there will be a strong effort to procure the publication of a description of all the patents granted from the commencement of the Government. With a large surplus fund on hand arising from the fees, this desirable object could be accomplished without any extra appropriation. In the absence of such a document how frequently does it happen that many inventions are invented over again; and many an industrious, mechanic elated with the prospect of making a fortune, has trudged on here from the far West, to learn, when too late, that he has been anticipated. One fourth the pay of members during the last two weeks of useless debate would suffice to place this information in the hands of every town clerk in the Union.

There has been a good deal of sport in relation to the proposed plan of laying down tubes so as to establish a speaking communication between the Capitol and the President's House. Supposing it possible to establish the communication, and some wag should get possession of the mouth piece, what jokes might not be played off in the name of Congress or of his Excellency the Old General?

Messrs. Slaughter & Perry, of Fredericksburg, Va., have just succeeded in procuring patents for two machines for the manufacture of cotton rope. This is a most important invention for the cotton growing States, as cotton waste, which is not worth, on an average, more than two cents per pound, by being worked up by this machine, can be converted into good cotton rope, worth twenty cents per pound. An invention like this being made in Virginia, will be the cause of no little exultation among the citizens of the Old Dominion.

Mr. Clay still wears the gold chain presented to him by certain jewellers in Brooklyn:—he says he feels prouder of it than of any other honor he ever received.

The difference in the cost of some of the principal railroads of the Union, per mile, is shown as follows:

Central Railroad of Georgia,	$15,000
That of the Georgia Road,	15,850
The South Carolina Road,	25,000
The Baltimore and Ohio Road,	41,777
Six New York Roads,	27,403
Sixteen Roads in Massachusetts,	53,627

*

The "Pauper Labor of England."

The table of wages paid in the cotton mills of England, published by a committee of Parliament, and therefore deemed to be authentic, shows the following:

Rate of wages paid in Manchester [England] cotton factories: Spinners, £1 to £1 5s. per week or nearly $1 per day; carders, at the rate of $18 per month; women, $3 per week; power-loom weavers, $3 per week; children, $1 75 per week.

Rate of wages paid at Bradford [England] woolen factories: Men average $5 per week; women, $3 per week; children, $1 25 to $1 75 per week.

The Richmond Enquirer says:

Compare these "pauper wages of England" with the wages paid by the cotton and woolen factories in Richmond and vicinity, and it will be found that not one establishment pays as high wages as the above named rates, and notwithstanding our factories pay less wages they all work more hours.

[We confess that we do not know what to say to the above, excepting that of the spinners wages, which are much higher in America, but the 10 hours system is universal throughout Great Britain.

Hudson, the Railroad King.

By late accounts, it appears that this rather notorious individual is by no means abashed through the late publicity given to his peculations. He is seen daily on the London Stock Exchange, lively and jolly as ever. His disgorging process does not appear to have hurt him much. He has sold his Londesborough estate, his Octon Grange estate, (bought for £70,000) and his Hutton Cranswick estate, comprising altogether about 16,000 acres of land in the East Riding of Yorkshire, to Lord Albert Denison, late Conyngham, the executor of the late Mr. Denison. He retains now only his Baldersley estate, which cost about £125,000, on which he has expended some £20,000, and Newby Park, which cost £20,000. He has made a small profit on the estates sold, and wants about £200,000 for the two left.

He has lately purchased $250,000 in Consols. There is an old saying of a rogue that when he fails it is with the "full hand," and Mr. Hudson fails not to give force to the truth of the adage.

Explosion of Railway Signals.

About two years ago, a Mr. W. Armitage chemist of South Lincolnshire, invented, a valuable explosive railway signal, for the purpose of indicating any danger that might arise on a railway line, and having received orders of late from several railway companies for a considerable number, was recenty engaged in the manufacture of them in a warehouse immediately over the kitchen, which stood attached a few feet from the dwelling house. Mr. Armitage entered the kitchen, and opened the door of an iron oven to take out some paste of a combustible nature, of which the signals are made, and which had been placed there to bake or dry. From some cause or other it exploded with a terrific report, igniting the combustibles in the warehouse above, reducing the whole building above to a heap of ruins, and burying five persons under the burning mass.—Having extinguished the fire, the unfortunate sufferers were dug out, when three were found quite dead, and two so much injured as to cause death shortly after.

Cure for Hydrophobia.

M. Arago announced to the French Academy that Mr. d'Hericourt, just returned from his travels in Abyssinia, has brought with him a medicament, which he has seen employed with entire success, in cases of confirmed hydrophobia. The traveller offered a quantity of it, sufficient for all necessary experiments, but we are not yet informed of the result. It will turn out no doubt like many other such great discoveries, in a failure.

Dreadful Steamboat Explosion in Belgium.

A deplorable and fatal accident took place a short time ago at Bois-le-Duc, in Belgium, by which many lives were sacrificed. The boiler of the steamboat Jan Van Arkle blew up just as it was leaving the pier; the shock was so great that it was felt all over the town, and the inhabitants rushed from their houses fearing that an earthquake had taken place. The steamer was literally demolished. Eight corpses have been found, and nine persons are mortally wounded; it is feared more lives are lost, as several persons are still missing. The boiler blew up with such force that a portion of it, weighing upwards of a ton, was thrown over the houses on a quay; another portion was thrown a distance of 200 paces. Three persons were blown into the air and fell in different directions, horribly mutilated. It is not known how the accident originated.

This accident is similar to the terrible one of the Louisiana, at New Orleans. The Belgian engineers are very deficient in that knowledge requisite for steamboats. They, through ignorance, nearly destroyed all the machinery of the British Queen in a few months after she was purchased from the English Company. We know of no profession that requires more skill and more unremitting watchfulness and sagacity than that of engineering. An engineer may be skilful, but if he does not combine watchfulness along with his skill, he is not fit to be trusted with the charge of an engine.

Interesting Law Case for Manufacturers and those having Water Dams.

The following case was decided recently in Boston, in the U. S. Circuit Court.

Day vs. Woodworth et al.—In this action the plaintiff sought to recover 700 dollars damages for an alleged trespass in taking down part of his dam on the Housatonic river in Great Barrington.

The defendant justified by alleging that they acted under the direction of the Berkshire Woolen Company, the owners of a dam and mills above the plaintiff's dam, and that the Company's dam was an old and long-established privilege. They also alleged that Day's dam injured their works by causing back water in their wheels: and as his dam was but recently erected, they claimed the right to remove the whole, as a nuisance. And admitting that they removed part of said dam, they alleged that they removed no more than they had a right to do, and that they did no unnecessary damage.

The jury found one issue in favor of the defendants, and one for the plaintiff's viz—1st, that the defendants had a right to remove the dam to the extent of three inches through the whole length; 2d, That the defendants, having removed more than that amount, had injured the plaintiffs by their excess of removal, to the amount of 200 dollars, and accordingly a verdict to that amount were given for the plaintiffs. It was stated that such a verdict in the U. S. Court does not carry costs. Choate and R. B. Curtis for plaintiff; S. Bartlett and Wm. Whiting for defendants.

Fearful Effects of Cholera.

At Siam in the East Indies, within a circle of twenty miles, in one place, no less than 30,000 died with the cholera in two weeks.—The living could not bury the dead, and although some places of our own country, such as St. Louis, suffered severely, yet it does not appear that the mortality was at all to be compared with that of the inhabitants of Bangkok in Siam.

Patent Case.--Water wheels.

On the 29th ult. there was decided in the U. S. Circuit Court, Columbus, Ohio, the case of Parker vs. Styles, for alledged infringement of Parker's patent, on the Re-action and Percussion Wheel. The verdict was for the plaintiff—the jury deciding that the Lansing Wheel was an infringement on Parker's.

Census of the United States.

1830, 12,866,020; 1840, 17,063,353. In 1850 the population will be 23,149,309. In 80 years hence will find the population of the United States 240,000,000; quite equal to the present population of Europe, or one-fourth the population of the world.

Woolen Factories in Michigan.

The Detroit Tribune has an article which embodies some interesting statistics respecting the production of Wool, and the manufacture of woolen fabrics in the State of Michigan. It says Michigan has gone into the growing of wool at a rapid rate, and is destined to keep on increasing. Last year the surplus that was exported was over 1,200,000 lbs,; and the small manufacturing establishments scattered throughout the State are estimated to have consumed 600,000 lbs. more. This season the amount exported will not fall short of 1,600,000 lbs, and at the same ratio another year it will reach 2,000,000. At a fair estimate, says the Tribune, there are a million sheep within the State. In 1840 there were but 89,984. The Tribune urges upon the people of Michigan the importance of establishing large woolen factories and of working up their own wool instead of exporting it.

Locomotive Explosion.

On the 2nd inst., at New Orleans, the locomotive Industry, on the Canotton Railroad exploded her boiler at the depot in that city.

The engineer and a fireman were instantly killed, and the locomotive was made a complete wreck. The noise of the explosion was heard a considerable distance; and the force of the steam hurled a large fragment of the boiler against the chimney of a house in Calliope street, completely demolishing it. The engineer whose name was Jacob Bisch, leaves a wife and two children; he resided in Carrollton. The explosion was stated on the ground to have been caused by the age of the locomotive, said to have been the oldest one on the line.

When shall we see an end to the carelessness of engineers, and the cupidity of companies, who endanger life for the sake of saving a few dollars, by using boilers of doubtful capacity.

A Demoniacal Spirit.

A keg of powder was recently placed beneath the Congregational Meeting house, at Enfield, Mass., and a slow match laid to it, for the purpose of blowing up the building. The powder was accidently discovered, and the plan frustrated, before its originators had carried out their too evident purpose. A concert was soon te have been given in the Church, and some think that that time was set for the explosion. The Ware Gazette says, the presumed object of this diabolical outrage was revenge upon certain proprietors of the Church who had taken active measures to put down the sale of liquors in that town, by prosecutions. There is a clue to the individual who is supposed to have arranged the plot.

Debt in Great Britain.

Mr. D'Israeli has stated that the lands of the United Kingdom are mortgaged for an amount two-thirds as great as the National Debt. And the interest on these mortgages, the interest on the National Debt, and the support of the whole governing aristocracy, comes upon the back of the laborers. But while all this is true it is well known that the increase of wealth in Great Britain is far greater by millions than the outlay.

Bank of England.

It is said that the directors of the Bank of England alarmed at the prospect of large importations of gold from abroad have resolved to apply to Parliament in the coming session for a repeal of the act which renders it obligatory to them to buy all the gold which may be offered to them at £3 17s 10 1-2d per oz.

Destruction of Flour Mills.

The front part of General Beach's building, in Rochester, known as the "City Mills," was crushed on the night, of the 3d, inst. It was caused by the immense weight of produce in it. Some 11,000 bushels of wheat went into the river and nearly all lost. The damage to the building is estimated at $2,000.

Georgia Burr Mill Stones.

A load of French Burr Stones having arrived at Savannah, Geo., a correspondent writing to the Republican, states that they are far inferior to the Georgia Burrs—that he had examined and compared the two made into stones, and found the Georgia, Lafayette Co., he best in every point of view.

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Planing Machine Patent Cases.

JACOB P. WILSON *vs.* DANIAL BARNUM.—In Circuit Court U.S., Eastern District of Pennsylvania. Issued directed from Chancery.

(Concluded from page 102.)

These claims are too plain to need remark or construction. The specification does not claim circular saws, or any combination with them; but if the defendant, under pretence of using saws for grooves, is in fact using the grooving cutter wheel described, by plaintiff, in conjunction with pressure rollers, then he has infringed his patent. You will say whether he has done so. It is not the intention of the Court either to express any opinion on the facts of this case, or to collate the evidence or arguments of counsel.

You have had the testimony and opinions of experts; but from actual examination of the machines themselves from hearing the testimony of skilful mechanics, the arguments of able and learned counsel, and being instructed in the law by the Court, you have greater opportunities of arriving at correct judgement than any other person could have.

The complainant's solicitors prays the court to charge the jury as respects their finding on the issue in this cause:

1. That what is claimed as new by the patentee is intelligible and accurately set forth in plain and unambiguous words in the specification of the patent of 1845.

2. That if the jury believe from the evidence the substance of Woodworth's invention is incorporated in the structure and operation of the defendant's machine, then their verdict must be for the complainant; and the jury must, on the present occasion, look, not simply, whether in form and circumstances (which may be more or less immaterial,) that which has been done by the defendant varies from the specification of the patent of 1845, but whether in reality, in substance and effect, the defendant has availed himself of the patentee's invention in order to do the planing, tongueing, and grooving of a board, &c.; or either.

3. That the patent of 1845 is for no particular means, or tools separately, to accomplish the desired object, but for a combination of means, and tools to that end; that one of the means, forming a part of the combination, is to hold the board down while being cut, (for which the patentee says that the pressure rollers or any analogous device may be used;) and if the jury believe that the same result, the holding down of the board, is obtained by the bent guages of the defendant, their verdict must be for the complainant, even though the defendant's mode of holding down the boards accomplishes some other advantage beyond the effect or purpose accomplished by the patentee, which might be a patentable subject, as an improvement upon the former invention.

4. That if the jury believe, from the evidence that cutter wheels are used by the defendant for tongueing and grooving, or either, the boards to be planed by the planing machine, in combination with pressure rollers, their verdict must be for the complainant, even though the machine for tongueing and grooving may be in fact disconnected from the machine for planing, and forming no part of the construction thereof.

5. That as regards the tongueing and grooving of a board, or as patented by the patent of 1845, his invention consists of a combination of cutter wheels with pressure rollers, as described in his specification, the effect of the pressure rollers in the operation being to keep the boards steady, and to prevent the cutters from drawing them to the centre of the cutter wheels; and if the jury believe from the evidence, that the defendant in his machine uses pressure rollers for the same purpose, in combination with the tools used by him for forming the tongue and the groove, and that they are essential in his machine to the result when produced, and that the same result substantially is produced in the machines of the defendant that is described in the patent of 1845 by the use of the tools employed by him in combination with the said pressure rollers, then the verdict must be for the plaintiff, even though the jury believe that the tools used by the defendant are what are ordinarily termed saws, separately or in combination; such saw in this view of the case, being mechanical equivalents, or analogous devices to the cutter wheels described in the patent of 1845.

The instruction of the Court is prayed to the following point by the defendant:

3d. McLean, 453. The proof of infringement devolves on the plaintiff. He alleges that the defendant has infringed his rights, and to obtain a verdict he must show it. Doubts under this head will incline the Jury favorably to the defendant, as he is not to be deprived of a right which is common to every citizen, unless it shall clearly appear that this machine is substantially like the one claimed by Woodworth. In answer to the points proposed by plaintiff's counsel,

1 and 2 are answered in the affirmative, as being in conformity with instructions more fully given to the jury.

3d. The third is refused. The conclusions stated in it are entirely at variance with the premises stated.

The plaintiff's patent being for a combination, it is no infringement to use one of the parts, pressure by rollers or any other device, is as open to the defendant to use it, and all the rest of the world, as it is to the plaintiff. Unless the defendant has used pressure rollers or other equivalents, in conjunction with the cutters, cylinders or chisels, substantially as described in plaintiff's specification, he has not infringed it.

Fourth instruction given as prayed for.

Fifth is refused.

The instruction prayed for by defendant's counsel is given as asked.

There can be no doubt that Mr. Woodworth has conferred a great benefit on the public by his invention, and his heirs and assignees should be protected against all infringement of the rights secured to them by the law of the land.

But the defendant has an equal right to invent machines for the same purpose, even if his competition may injure the plaintiff's patent, if he can do so without invading his rights. Whether he has succeeded or not you will judge.

Gun Stock Machinery.

U. S. Circuit Court, Oct. 5—Before Judges Grier and Kane.—Blanchard's Gun Stock Co. vs. Eldridge.—In this case John P. Frazer, John C. Cresson, and Charles B. Trego, were appointed Commissioners to examine the machine in defendant's shop, Steam-mill Alley, and report whether it is an infringement of the plaintiff's patent.

The Commissioners appointed by the Circuit Court of the United States, for the Eastern District of Pennsylvania, on the 5th day of Oct., 1849, in the case of Thomas Blanchard vs. Isaac B. Eldridge, make the following Report:—

That having been first officially informed of their appointment of the 27th ult., they at once proceeded to inspect the machine used by Issac Eldridge, the defendant, in Steam-mill Alley, and carefully examined the same, both in motion and while at rest; that the said defendant also submitted to their inspection a working model of the same. They also received from the counsel of the plaintiff a printed certified copy of the specification of Mr. Blanchard's Patent, with an accompanying drawing, and a model of a machine, in which the principle and mode of operation set forth in the patent, was embodied; and they visited and saw at work, at the Shoe Last manufactory of Mr. Howard, in Sassafras street, a machine also containing the principle of said patent; and after a careful examination of these machines, and models, and comparison of them, with the Patent of Mr. Blanchard, the Commissioners are of opinion that the principle and mode of operation of Mr. Blanchard's machine, are fully set forth in the second article of his specification, and especially in the following paragraph:

"The rough material must be so placed in the machine with respect to the cutter wheel that the axis of the motion of the rough material, and the axis of the cutter wheel shall always, throughout the operation, be exactly parallel: hence the movement of the cutter wheel must be in an opposite or in the same direction with the rough material, the movement of the cutter wheel being greatly the faster. Either the cutter wheel, or the rough material must have a slow, gradual movement at right angles to the movement of the cutter wheel and rough material. By these co-operating movements it is plain, the cutters are made to pass over the whole surface of the rough material, cutting away from it, even the smallest portion that comes within reach of the cutter, provided the rotary motion of the rough material, and the motion at right angles aforesaid, be so timed, that the rough material makes one complete revolution at least, while the cutter or the rough material, by the motion at right angles aforesaid, is carried in the direction parallel with the axis of the rough material, only the breadth, or a little less than the breadth, of that part of the cutting edge of the cutters, which cuts the last chip from the material in the process of cutting."

And that Mr. Blanchard has confined himself to this method, by the express language of the last sentence of this second article, viz., "but he claimed as his invention the method or mode of operation in the abstract explained in this second article, whereby the infinite variety of forms described in general terms in this article, may be turned or wrought." That is to say the only method proposed by Mr. Blanchard is that in which the friction wheel or tracer describes a spiral line over the whole surface of the model, and causes the cutters to act in a similar direction. On the other hand in the machines of the defendant, which the Commissioners inspected while at work, as well as in the model of the same; the tracer which is altogether different in form from any other used or described by Mr. Blanchard, passes rapidly from one end of the model to the other, and backward in a line which lies in a horizontal plane, giving motion in a similar plane to the cutter wheel, and at each end of the motion the model and rough material receive a small and equal motion of rotation around their larger axis, so that the tracer and cutter never pass over the same horizontal line, a second time; the action being very similar if not identical with that of the machine for making card handles, with the substitution of the rotating cutter instead of the shaving knife. And it is further the opinion of the Commissioners that this difference is not a mere colorable and unimportant change from the method described in Blanchard's Patent but that it is essentially different, and renders the machine capable of producing more accurate work in certain respects; inasmuch as in cases of certain irregularities in form—such as cutting after a model of a shoe last of small width and high instep, the machine of Mr. Eldridge would make a more exact copy of the model than could be done by that of Mr. Blanchard's, and this opinion is confirmed by what the Commissioners saw in the working of the machine admitted to operate on Mr. Blanchard's principle at Howard's shop.

The Commissioners are further unanimously of the opinion that the machine of Mr. Eldridge, the defendant, is different in its principle and mode of operation, from that described in the Blanchard patent. All which is respectfully submitted to the Honorable Court by the undersigned Commissioners, as aforesaid.

JOHN F. FRAZER.
JOHN C. CRESSON.
CHARLES B. TREGO.

Dated the first day of Dec., 1849.

An Orkney Post Runner.

The John O'Groat Journal mentions the sudden death of one of the post runners when entering Kirkwall with the South mails. The mails to and from Orkney are conveyed between Kirkwall and the ferry at Berwick, in South Ronaldshay, on the backs of post runners, who travel on foot. The distance, going and returning, is 32 miles, with about eight miles additional of ferries. The weight which the post runner has thus to carry is sometimes 60 to 70lbs, and as each runner has to perform this duty twice a week, on an average, travelling nearly half the distance through a district where he has literally to wade through mud and water. During a periot of 29 years deceased has travelled 117,000 miles by land, on foot, and 13,000 miles by sea, across ferries, making a total of 130,000 miles.

Crime and Education.

"The British Government, after several years' experience, has been forced to the conclusion that imprisonment, either solitary or accompanied with labor, has no effect whatever either in deterring from crime or in reforming criminals. Statistics, compiled with scrupulous care, have also demonstrated that education has no perceptible effect in checking the increase of crime. It has been ascertained that the number of educated criminals in England is above twice, and in Scotland above three times and a half, that of the uneducated. In 1848 the number of educated criminals in England and Wales was 20,176, while the un educated was 9,691. In Scotland 3,985 educated to 911 uneducated. It has also been ascertained that the average cost of maintaining a prisoner in jail, throughout England, is about eighty dollars a year, and that at this rate the prison expenses of that country amount to over one million pounds sterling per annum. Under this state of facts the British Government has issued an order in council authorizing a return to the system of transportation."

[The above has found its way into almost every paper in the Union, crediting the same to Blackwood's Magazine. We wish to say a few words in regard to it, to clear up the mat ter and present it in its proper light.

The argument deduced from the above, to prevent crime, is to make the people ignorant—to lock up the school-house. Surely no man of common sense can doubt the false conclusions arrived at by the article in question. The above figures are proof fact, that there are less educated than uneducated criminals. In England and Wales the proportion of uneducated criminals is nearly 50 per cent. of the educated while in proportion to the whole population, the number of uneducated people is about 30 per cent.—showing a per centage in favor of education of 20 per cent. In Scotland, by the above statistics, the uneducated criminals, in proportion to the educated, is about 27 per cent., while the uneducated, in proportion to the whole population, is only about 10 per cent.; showing 17 per cent. in favor of education as a moral elevator. Let none of our people draw favorable arguments for morality from the records of ignorance—for every true analysis of these records, proves the very reverse of that which the "advocates of the blessings of ignorance" attempt to prove. Education is the handmaid of elevated morality, but the blessings of education may be abused, and intelligence may be made the instrument of greatness in crime. How can this be? Subject an educated people to misfortune by desperate acts, or crush them by unwise national policy, so that they will be reduced from comfort to starvation, and then will they not steal rather than starve, and commit robbery rather than beg. It has been demonstrated by incontrovertible statistics, that when work is plenty in Britain, and wages good, crime ceases as if swept away by the wand of a magician. Give our industrious race work and fair wages, and the hands that would otherwise be committing mischief, will be doing good. Education makes some men splendid criminals, but it is for want of moral rectitude. Does any person suppose that an educated man is not so susceptible of moral impressions, as an ignorant man. Surely not.

We have been induced to make these comments upon the above paragraph to strip error of its garb and plausability; and as advocates of the blessings of education, to give our reasons for finding fault with the press for spreading such statements before our people—statements and assertions which affect them so materially, without giving the subject some examination, or making some comments upon it. The great increase of crime in Britain within the past few years, is caused by poverty—the result of frequent stagnation in their manufacturing operations. This should be a useful lesson to us. A rural people, firm in their own free domains, are always the most virtuous, and consequently the more happy, and all the happier for being educated.

To Mariners.

Four new shoals have been discovered in the main ship channel of the Nantucket Shoals, by Chas. H. McBlair, U. S. N.

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New Inventions.

Improved Mattress.

The Philadelphia Ledger says that Mr. John Y. McElevee, of that city, has invented a Spiral Spring Mattress, made of springs similar to those used in our best sofa bottoms, and which with a thin covering of hair, gives to the whole, when completed, all the elastricity of the ordinary mattress and the softness of the feather-bed. There are used in its construction about fifty wire springs, flaring at the top and bottom, which are set at regular distances apart, and in such numbers as to bear, without loosing their elasticity, the required weight to be put upon the mattress when finished. These springs are strongly secured in their places by cords, and are covered at top and bottom with canvas of suitable strength, upon which is spread a coating of curled hair, the whole covered with ticking, resembling, when completed, a well made hair mattress. Thus is furnished, mainly of iron an article of domestic use, for which the softest materials have heretofore been deemed indispensable, and which, being besides much cheaper than the feather-beds and mattress, is even lighter, more lasting, easier handled, and from the fact of its being more open to the air, is less likely to become compact or sodden, a matter esteemed of great advantage in the way of health. It seems very complete, finished off handsomely, and looks like meeting with large favor, especially at the hands of the women.

[The above is a good article, we believe, and we are glad to see it introduced among us, as it is represented by the London Patentee to be more healthy and more cleanly than any other kind of bed. It has been named "the Rheiocline Patent Iron Spring Bedstead."

Machine for Reporting and Printing Speeches.

Mr. John B. Fairbank, of Leon, in the County of Cattaraugus, N. Y., has invented a machine for reporting and printing speeches by characters representing sounds or words, by means of characters, by changes wrought upon a less number of moveable types, than the number of letters or representation of sounds used for phonographic writing or printing.—The machine is constructed with finger keys, which the operator plays upon it like a piano, whereby the certain characters representing the words spoken, are impressed upon a moveable sheet of paper in the case of the machine, the paper being moved on a carriage operated by the foot, while the hands are operating the keys. Measures have been taken to secure a patent.

Newspaper Folder.

The Brussels Herald states that an invention of a novel character has lately been brought out in Paris, which is nothing less than a machine for the folding of newspapers, which has hitherto been performed by the hand, and now effected by a peculiar machine. With the assistance of one person to attend to it, this machine will fold 2000 newspapers an hour. A patent was secured for a Yankee machine of this kind two weeks ago, (to be found in our list of claims) which we venture to state, is the best of its kind in the world. It will fold four times as much in the same time as the one mentioned above.

Improvement in Working the Valves of Steam Engines.

Mr. Geo. B. Milner, of Houston, Texas, has invented an improvement for operating the cut off at any point in a most beautiful and superior manner, for which he has taken measures to secure a patent. The principle of it consists in using a cam on which there is an indicating scale to set the said cam at any point, at any moment to cut off at any length of the stroke, while the exhaust valves are always uniform in their action.

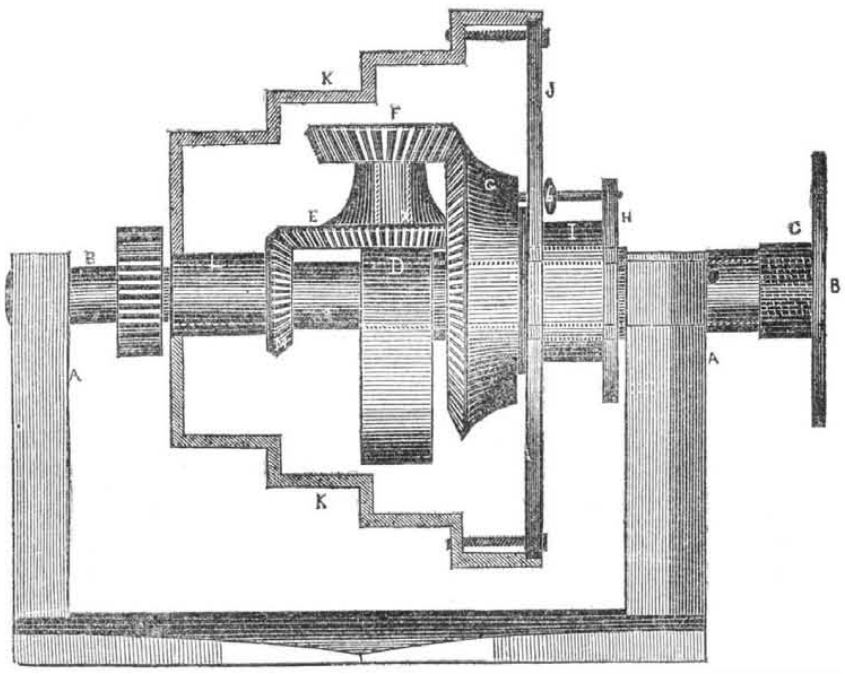
New Printing Press.

A letter in the Concordia (Miss.) Intelligencer states that a Mr. James A. Campbell has invented a printing press which will throw off 18,000 sheets per hour, printing both sides at once and doing its own feeding and flying. This is certainly too good news to be true.

CHAPIN'S PATENT LATHE GEARING.

This is an invention of Mr. William Chapin, of St. Johnsbury, Vt. It is a new plan for confining the gearing within the cone pullies—making them a box and adapting the combination to change the speed of the shafting in an exceedingly simple manner. The invention was patented recently, and the model was exhibited to us by Mr. T. Fairbanks, of the firm of E. & T. Fairbanks, the well-known scale inventors, who are interested with Mr. Chapin in this improvement.

A represents the standards of a lathe, supporting the shaft, B. C represents a chuck screwed on to the said shaft. K represents a cone of pulleys—they are seen in section to show the interior gearing. B is only a small pinion outside, and forms no part of the invention. The cone of pulleys being formed like a box, they have two collars, one of which is L, through which the shaft, B, passes. On this collar, inside, there is a bevel pinion, M. X is a small transverse spindle running through the shaft, B, and keyed to it. E is a bevel wheel on it, and F is a bevel pinion. These two are made on one collar and run on the shaft, X, as their axis. G is a bell bevel wheel, having a collar loose on the shaft, B, and which collar extends out, (seen by dotted lines) terminates in a circular flange, H. The cone pulleys, K, have their collar, I, running loose on the top of the collar of this wheel, G, and confined between the plate, J, and the flange, H. The figure above represents all the gearing coupled, so as to run at one speed, with the pulleys, K. This is done by the small pin, b, which is used to be pushed through an opening in the plate, T, of the pulleys to couple it with the flange, H, of the wheel, G. But when the



shaft, B, is desired to have a less speed than the pulleys, the pin, b, is withdrawn out of the plate, J, and inserted in the standard, A, in the opening indicated by the dotted lines, when the flange, H, is coupled with the standard and the bevel wheel, G, is held stationary. As the cone pulleys, K, only gear with the shaft, B, by means of the pinion, M, this pinion being small, gears into the bevel wheel, E, which gives motion to F on the axis, X, and this biting into the teeth of the wheel, G, commences to travel round its whole circumference, revolving the shaft, B. The shaft, B, therefore makes one revolution during the time the pinion, F, takes to go around the wheel, G. Therefore if the wheel, E, is twice as large as the pinion, M, and F one half smaller than E, and the wheel, G, three times larger than F, the motion of the shaft, B, will be five times slower than the motion of the pulleys, K. D is just a balance for the gearing on the other side of the shaft.

A little attention with this explanation will convey a clear idea of the nature of this invention. It is very simple and is not liable to get out of order. Communications addressed (*p. p.*) to Mr. Chapin will be promptly attended to.

Sliding Scale Interest Table.

There is for sale by Messrs. Nafis & Cornish, No. 278 Pearl street, this city, tables for calculating the amount of interest, on a scale of any sum for years and months. This table is called the sliding scale interest table, invented by Mr. J. W. Hatch. Its simplicity and ingenuity may be well described by a word in common use—it is "a *cunning* calculating table." The calculated amounts, or tabled interest sums, are placed in the inside of a frame like that of a common slate, and there is an index of sums from $1 to $1000. On a transverse slide, which can be moved snugly in the frame, up and down, from top to bottom; there are two divided tables, one for a year and the other for months' interest. If it is desired to know the amount of interest, for example, for $100 at 7 per cent. for 9 months, the slide has just to be drawn down to the index 100, and by looking over on the slide, at 9 on the months, it points to $5,25 on the interest table. It is a very convenient instrument, and should find a place on every desk.

Improvements in Tables.

Joseph Peckover, No. 240 Water street, this city, has made some very beautiful improvements in the construction of paper machie tables, which consist in the arrangement of a ball in a socket, for the purpose of clamping the top of the table firm to the frame, when thrown in a vertical position, and immediately releasing it when horizontal. The joints and connections are so formed that it can be easily converted from an ordinary table into an auxiliary one, and the legs turn upon knuckles arranged on the ends of a triangular frame, and are held firm underneath by means of lyre-shaped springs, when not required for use.

Improved Cast Iron Hydrant.

The Philadelphia Sun says that Mr. Robert King, blacksmith, of Southwark, has invented a cast iron hydrant, which meets with general commendation. It is made in two sections, one of which is sunk in the side-walk, and the other section is cast with a band on the lower edge, which is made to slip over the other, or permanent section. Hooks properly adjusted on the inside fasten the two together and hold them perfectly tight. The goose neck is cast with flanges, and it is attached to the lower section of the plug, by means of screw-bolts, which can be removed in a few moments, in case the plug should want repairing.

A Steam Man.

A mechanic in Russia is said to have succeeded in making a steam man. It is probably, says an exchange, one of the most interesting inventions ever offered to the public. It is a colossal statue, the feet of which are placed upon wheels upon a railroad, and as he goes thundering over the course, the steam comes puffing out of his nostrils in a manner to give the appearance of Satan as pictured in Revelation. Our own opinion regarding it is that there is nothing wonderful about it. There are hundreds of mechanics in our own land who could make steam men, if they received orders to do so and good pay for their labor; but of what utility would it be when executed.

Improvements in Machine Calico Printing.

Mr. John Dalton, of Holingworth, England, has lately enrolled a patent for some very important improvements in Calico Printing, which must be of interest to many in our country.—The improvement consists in covering with gutta percha the lapping or blanketing that is wrapped round the cylinder that receives the press of the engraved roller. The gutta percha is applied in the form of a very thin coating being dissolved in some solvent for that purpose, such as bi-sulphuret of carbon, benzole, or camphene. The solution is applied to the lapping by placing it in the color box and running the lapping through in the same way as printing the calico. The temperature of the camphene solution of gutta percha should be about 130°. The lapping is dried over steam cans. This lapping is said to last five times longer than the old kind without the gutta percha, and is far better adapted for the purpose. It may be as well to state here, that if any of our printers try this they must never keep the blanket, or bring it, in contact with any thing at 150° of heat, or above it, as it then would become soft and unfit for the purpose.

For the Scientific American.

Cure for Murrian in Cattle.

I see an enquiry in No. 10 of your paper for something to cure the murrian in cattle. I can give you what information I possess on the subject. It is a disease of frequent occurrence in this State, and particularly in the southern tier of counties, bordering on Ohio and Indiana. A medicine that I have often used myself and seen and heard of others using frequently in this vicinity, is the "Juniperus Communis," or common juniper. Take of the green twigs and berries that may happen to grow on them, as many as can be handily put into a kettle holding a common pail full, or from 8 to 12 quarts; fill it with water and boil it half an hour, after which take out the twigs, and if the animal will eat bran, mix in a sufficient quantity of it to make a slop of it, which by adding a little salt, will generally be speedily eaten by the creature; if, however, they refuse to eat, which is sometimes the case when they are fevery, and inflammation of the internal organs (viz., intestines, kidneys, urethra, &c.) has commenced, they should be bled freely in the neck, and the blood, together with the strong juice of the juniper should be poured down them, two quarts at a time, every four hours, until it operates as a cathartic and diuretic; this course I have never known to fail to produce a cure, if resorted to in good season and followed up vigorously until the above effects are produced, before the disease has become too far advanced. Yours truly;

ISAAC SNYDER.

South Jackson, (Mich.), Dec., 1849.

The Astronomical Clock, Who is the Inventor.

There is a controversy carried on for some time in the Cincinnati papers, by Prof. Mitchell and Dr. Locke, respecting who was the original inventor of the Electric Astronomical Clock. Last Congress appropriated $10,000 to Dr. Locke to construct a clock for the Observatory at Washington; and the completion and erection was duly noticed in our columns. Prof. Mitchell states that he was not only the first inventor, but that his invention is superior to that of Dr. Locke. He says that he "has actually recorded the places of no less than 103 stars in Right Ascension and Declension in 20 minutes, which no other machinery could give the twentieth part of this number with equal accuracy."

Great Sale of Oriental Shawls.

On Monday, last week, there was a great sale of India Camel-hair shawls, in Niblo's Saloon, this city. They were sold by order of the British Consul, and put up in 185 lots. The average price for each was $100. One was sold at $870. The whole brought $17,785. It will be seen that as much was paid for one shawl as would keep two workmen's families very comfortably for a whole year.

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Scientific American

NEW YORK, DECEMBER 22, 1849.

What is the Golden Age.

In every age there is a class of individuals who are continually mourning over the present—whose affections are all with the past. The virtues of their fathers, and the vices of their descendants, are themes upon which they harp alternately. To some men, the middle ages alone, were golden with great men, glorious and *good times*. In the present they see nothing to admire, but with every new race, an increase of corruption and degeneracy. A great number of people imagine that the world is always growing more wicked, and every succeeding generation more miserable in comfort and all that can render life desirable.—They see poverty where there should be plenty; they see suffering where there should be enjoyment, if the times were but like "the *good old times*. There are authors who write pompous and thrilling paragraphs, and spouters who eloquently depict the miseries that have increased with our boasted civilization, and they sigh with tearful cadence over the blessings enjoyed in the golden age gone by. They would endeavor to make us believe that our advancement in education, improvements in the Arts and Sciences, instead of benefitting mankind, had only been the means (to use their own words) "of making the rich richer and the poor poorer,"—to elevate one class to the third heavens, and sink the other deeper and deeper into the pit of suffering and degradation.

We are among the number of those who believe that education has a moral elevating tendency, and that improvements in the Arts and Sciences, have made the majority of mankind more comfortable, and placed within their reach, the means of more, and a higher state of enjoyment, at the present day, than during any preceeding age of the world's history.

In tracing up the literature of sentimental moralists, for a few centuries back, we find that every new race rightly views the vices of the past mellowed in distant shadows, while they look upon existing evils in the full vertical light of the noon-day sun. But when we look to the past, we behold that land which originated common schools, and which since then has become famous for her wisdom, genius and learning, steeped in ignorance and crime. We see her patricians wearing the privilege of stringing up some of our good forefathers for some pretended offence, or stretching him lifeless with his dagger, the penalty at most being the fine of a few pieces of silver. The time is not long past, when the turf hut of the feudal serf was to be seen in many places of Britannia's Isle, and where, without a chimney, the smoke arose from the rough fire place on the floor, curling among the sooty rafters until it made its elopement through the open roof. There are many old men yet living among us, who remember the luxury of good oiled paper windows, and when but few of the common houses of our forefathers, in now favored America, were lathed and plastered, to shelter their inmates from the winter's icy breath. It is not many years since the man was more than common in this world's wealth, who could flourish a fancy calico handkerchief—a thing which is now the property of the poorest of the poor. Wherein has the world gone backward in one point, but in the imagination of dark-minded grumblers. So far as we can judge, in looking back upon the experience of our life in the world, our opinion is favorable to the *now* being the *golden age*. The necessaries of life are as easily obtained by every person now, as ever they were, and the luxuries far easier. Yet while there is misfortune and unholy passions in the world, there will always be suffering, and of a truth, we may justly say, "the poor shall never cease out of the land." But there never was a time when more was placed in the hands of mankind to render all comfortable—there is enough and to spare; and we certainly look upon our advancement in civilization and our improvements in science and art, as things which make the present generation more responsible than any preceding one, for all that can render mankind virtuous and happy. In saying this much for the blessings we enjoy we cannot shut our eyes to the great amount of misery that is still in the world, especially in large cities, and in favored America as well as in suffering Europe. During our severe winters at the North, there are thousands who by misfortune and sickness, suffer extremely, and many of these have been reduced from wealth to penury. As a general thing they shrink from complaining, and in our wilderness of myriad homes, they are more isolated from benevolence than if they dwelt in the depths of the forest. Many, alas, too many, suffer from their own imprudence—giving force to that truth, "the ways of the transgressor are hard." There are many good societies which have for their object "the relief of the distressed," but let no one who can, forget that we, in the present day, have golden opportunities, and by the concentrated, universal will to do good, to sweeten the cup of life, we can render the *present* (and every future generation can its *present*) the "Golden Age."

Purification of Old Casks, Feathers, &c.

Within the past few years a new patented system has been introduced into London, for purifying casks and other things, or rather as it is called "desicating them," which is at once novel and worthy of attention. The principle of it consists in ejecting for some time a stream of hot air into casks or vessels to purify them. It is represented to be most effectual for purifying water and brewers' casks, and is used in hospitals for desicating clothes, with the most happy results; and beside these purposes it is applicable to a great number of others, such as purifying feathers, drying wood, &c. The heating apparatus consists of a number of cast iron pipes, (say fifteen) of a horse-shoe form—the area of each inside being twelve inches, and they are about one-quarter of an inch in thickness, and ten feet long. The whole of these pipes drop into sockets in a horizontal pipe, which is about ten inches in diameter and is divided so as to let cold air pass into four of the horse-shoe vertical pipes, which being expanded by the fire in the furnace, into which the said pipes are set, passes thence into the next five pipes at once, where it is divided, and then passes into the next six pipes—the air passing three times over the heating surface. From this a pipe, or a number of nozzles, it passes into the interior of casks placed in suitable position for that purpose. The air is driven in by means of a fan of 18 inches in diameter, which makes more than 1000 revolutions per minute. The casks should be moistened with warm water before the hot air is admitted. The current of hot air passing through a mouldy cask becomes impregnated with the mould and carries it off. Dry heat is a purifier, as has been proven in some countries, as the clothes worn by persons who had died of the plague were rendered perfectly harmless by being exposed for some time to 230° of Fahr. By the dry hot air process, every crevice of the cask is deprived of all its musty moisture in a few seconds, owing to the rapidity with which the air is propelled. It had been supposed that this principle of purifying casks would have been injurious to the wood, but the reverse has been found to be the result—the pores of the wood are found to close, and the surface becomes harder, which prevents the cask from imbibing so much moisture again. The casks are a little shrunk by the process, which causes a little additional cooper work in driving up the hoops, &c., but it is stated that if the casks were made of wood dried in this way, that there would be very little shrinkage. The temperature of the hot air used is about 350°. This method of purifying casks is cheaper than any other, because the casks in no case require to be unheaded. In one brewery in London, Messrs. Truman, Hanbury, & Buxton's, an apparatus like the one described has been employed for three years, purifying occasionally 220 casks per day, at an expense of about 3 cents per cask, which by the old way would have cost for scrubbing, hard steaming, heading, &c., about eighteen cents. The invention has been applied in some print-works and dye-works, to dry the goods, also to dry vulcanized india rubber, and paper mache goods, also for drying sugar and japanned work, especially japanned leather. For large establishments it recommends itself at once, either for purifying or drying. As the air is forced in by a blower, it is not deprived of its oxygen when passing through the tubes in the furnace, but is merely heated and rarified. It is a very simple contrivance and on that account, it deserves attention, as something worthy of a trial, at least by some our large establishments.

Important Telegraph Decision.

In a recent suit against Henry O'Reilly for an infringement of the Morse telegraph patent, before the U. S. District Court at Columbus, Ohio, Judge McLean decided that the Morse patent was null and void, in consequence of illegal specifications and for other reasons.—Although the decision has not been officially promulgated, it has been so rendered, as we are credibly informed. If this decision is sustained there will be no further hindrance to unlimited competition in telegraphing, as there is none now between the Morse and Bain system.—[Troy Whig.

The statement in our Supplement of Saturday that Justice McLean has made decisions against the claims of Prof. Morse, in one of his suits against O'Reilly is fortified by the following despatch to the New York Express.

IMPORTANT TELEGRAPHIC DECISION.—Columbus, (Ohio,) Dec. 13.—Judge McLean, of the Supreme Court, has rendered an important decision against the Telegraph claims of Morse, Kendall & Co., announcing in substance as I understand, that their claim to a patent is invalid and void in the region of country covered by Morse and F. O. J. Smith, in their contract with O'Rielly. The decision, I also believe, extends to the invalidating of the patent generally.

We have another dispatch which says Judge McLean declares Morse's patent invalid, until he strikes out his claims to dots and lines.—[New York Express.

We presume the latter is the more correct version of the decision. Judge M. must have rendered it in a case argued some weeks since, as he is now and has for some days been in Washington.—[Ed. Tribune.

[There is some mistake in all of the above paragraphs. Judge McLean cannot declare a patent void for any District of the United States. A patent that is void for one part is void for all, and suppose that the lines and dots of Prof. Morse's alphabet may be too great a claim, still that would not make the whole patent void. If Judge McLean decided in this way, (which we do not believe) his decision is not a correct one—the patent will not be void according to the act of 1837, only the patentee cannot recover costs unless he has entered a disclaimer before the suit was commenced. The claim of Morse to the Chemical Telegraph would, in our opinion, render it void, because it is an incorrect one; but the claims of Prof. Morse for the Electro Magnet to make marks on the paper, will stand, we believe, as it should, against the world. Let every inventor have his just rights sustained.

Fate of a Philosopher.

The foreign correspondent of the Boston Post says that Dr. Dick, the celebrated Christian philosopher, is now reduced to want. In consequence of the liberal tendency of his writings, the British Government has refused to grant him a pension, and now, unless private benevolence furnishes the means of subsistence he may be left to starve. It is proposed that lectures on his character and writings be delivered in the principal cities in the United States and the proceeds applied to his benefit.

[We do not believe a word of the above, except its character of untruth. It premises that Dr. Dick petitioned for a pension, and in the next place that unless the public make him an object of charity he must starve. We like no such false benevolence. Let those who have published and profited by his works be made to disgorge.

We have received an article on the Re-issuing of Patents, which communicates important information on the subject. It will appear next week.

News from Abroad.

The United States Steamer Hermann arrived in this city on the 5th inst., having on board Hon. A. J. Donaldson ex-Minister to Germany, and suite, besides several Hungarian refugees of notability, whose intentions are to make arrangements for forming a colony in this country.

The Hermann brings a most valuable freight of French, German, and British goods. From Bremen, the freight comprises 190 tons measurement goods in about 1000 cases and bales of cotton, and woolen manufactures, the produce of the German and Saxon manufactories. The total value of the cargo is estimated at between 7 and 800,000 dollars.

The Hermann will lay up here for three months to undergo a thorough repair of her boilers and machinery; and will, with the Washington, resume her trips to Southampton and Bremen in March next.

During the whole of the present year, the steamers of this line have been remarkably correct and punctual in the days of their arrival and departure. In a pecuniary point of view they have been very successful and remunerative, and have opened up a large and important trade with the United States. The speed of the Washington and Hermann, is certainly not so great as that of the Cunard steamers. They have nevertheless, established, a confidence on the part of the public, and we look forward to the line increasing in popularity and usefulness.

We understand that the Hermann makes about $15,000 freight this voyage home, exclusive of passage money and the mail contract.

California.

Since the commencement of the gold excite-or within the past year, the number of vessels that have left the Atlantic ports for California amounts to 730. Of the number their had arrived at San Francisco up to the first of November 265.

About fifty thousands persons have gone to California in the above 730 vessels, by the way of Cape Horn, in addition to the thousands that have gone overland and across the Isthmus of Panama, and the probability is that the emigration of the ensuing year will exceed that of the present. A few will make money, while the larger portion will wish themselves a safe deliverance from gold hunting and miners' perils.

Dresses for Children.

We often hear of accidents to children during the winter season, by their clothes taking fire. To prevent such accidents, children should not be clothed with calico, but woollen clothes of some description, and flannel is about the best we could recommend. Camphene should never be employed in houses where there are children, nor in any family, with but few exceptions. If calico clothes be impregnated with a strong solution of alum, and then dried at a high temperature, they are rendered nearly incombustable—they will at least not take fire easily. This information is useful to many, as it will enable them to render their clothes nearly fire-proof, and at the same time nearly water-proof, for alum possesses this quality also.

A Stitch in Time Saves Nine.

The above adage is capable of universal application, and we were never so fully impressed with its truthfulness, than we have been for the last two weeks, by seeing so many poor stage horses falling in our streets for want of being properly shod for frosty weather. We are positive that the injury done to the animals will cost far more to the owners than would a little extra blacksmithing. A merciful man is merciful to his beast, but mercy and money are too antagonistical for this world.

Notice.

We have been anxious to finish Judge Grier's charge, therefore we occupy more room with it this week than usual. Some other articles are longer than is our wish to have them. We delayed the publication of some articles which we have had on hand for some time, but they will be good at any time for publication.

We have received a number of communications which are too long, and not pointed enough—they cannot appear.

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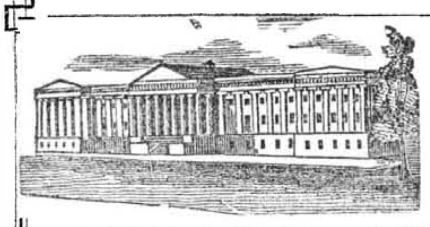

LIST OF PATENTS CLAIMS

ISSUED FROM THE UNITED STATES PATENT OFFICE,

For the week ending December 10, 1849.

To Edward Brierly, of Lowell, Mass., for improvement in apparatus for Dyeing.

What I claim is the above specified mode of process, either stripes or fancy patterns on or in cloth or fabrics of various kinds, the same consisting in the employment of one or more dye vats and a dyeing frame, so constructed as to prevent the dyeing liquid from penetrating those portions of the cloth which we may not desire to color and at the same time to allow the coloring liquid to freely come in contact with the remainder or those which it may be desirable to color; substantially as specified.

And as auxiliary thereto I claim the employment of two vertical frames, in connection with the main dye frame, in the manner and for the purposes of protecting from contact with dyeing liquid those parts of the cloth which may be strained directly over, against, or on the ends of the horizontal strips of the main dye frame, as set forth.

To John T. Brown and Moses Fuller, of Midville, Ga., for improvement in Brick Presses.

What we claim is the combination of the horizontal mould wheel, with the mechanical discharger and endless conveyor, in the manner and for the purpose herein set forth.

To Abel Gardner, of Buffalo, N. Y., for improvement in apparatus for bending Hames.

What I claim is the process of bending hames by means of the combination of the hook piece and the iron strap, made fast at the ends, in the manner and for the purpose herein fully set forth.

To Asa Greenwood, of Marlboro, N. H., for improvement in machinery for turning Clothes-pins.

What we claim is the rotary mandrel, the cutter for reducing the stick to a cylindrical shape, the cutter for forming the body of the pin, the cutter or cutters, for forming the head, the centre rod, its fork and pattern lever; the whole being applied to carriages, and made to operate together, substantially in the manner and for the purpose as above specified.

To Lewis M. Hartley, of Kensington, Pa., for double bolt Trick Lock.

What I claim is the combination and arrangement of the twin bolts, (any number being arranged in the same case,) tumblers, having pins at their ends which enter corresponding notches in the bolts, traversing the slotted plates and pins on the bolts, entering the slots of said slotted plates, subtantially as herein set forth; the bolts nearest the key hole being required to be thrown out and in, before the other bolts can be thrown out, and vice versa as described.

To Edwin A. Jeffery, of Corning, N. Y., for improvement in packing Pump-pistons.

What I claim is the pump piston constructed essentially of two dics and a valve, substantially as herein set forth, whereby it is rendered capable of keeping itself packed with water. [See Engraving in No. 10, Vol. 5, Sci. Am.]

To Alfred Jenks, of Bridesburgh, Pa., for improvement in the mode of changing the gearing of drawing heads while in motion.

What we claim is a sliding spring key, arranged and operated substantially as herein set forth, for connecting any one of a series of wheels with a common spindle and for disconnecting it therefrom at will.

To Moses Marshall, of Lowell, Mass., for improvement in Looms for weaving figured fabrics.

What I claim is the improvement herein above described, in the machinery for operating the harness, so that any proper number of heddles, may be used, or changed, as desired, without taking the loom to pieces, said improvement consisting first, in providing the movable spring rests for supporting the jacks of the harness, when they are not in use, and which are sprung back by the bevel face on the shoulders of the jacks, when they are kept in play by the cams on the pattern chain, the whole arrangement being substantially as herein above set forth; and, second, in the "evener," constructed and operating as herein described, for assisting in moving the upper heddle levers, and keeping them even, so that the cams or rollers on the pattern chain will operate accurately on the jacks, as specified—meaning to claim the exclusive use of said spring rests and "evener," in a loom, the invention of which is entirely original with me.

I also claim the combination of rotating, lifting and depressing bars arranged in endless chains, so as to revolve, as described, with the forked jacks, having internal shoulders, as specified.

To John Moulton, of Ossippee, N. H., for improvement in Bedstead Fastenings.

What I claim is the use of several projections, as set forth, combined with the recesses cut into the sides of the mortise, substantially in the manner and for the purpose herein set forth.

To Isaac Munden, of Alleghany City, Pa., for improvements in Machinery for preparing Hubs for Boxes.

What I claim is, first, the hinged saws, (3), constructed and arranged in the manner described and operated, as set forth, for centering the mandrel to bore wagon or carriage hubs.

Second, I claim the hinged segmental nut, constructed as described, in combination with the mandrel, which has a square and inclined thread cut upon it, to coincide with a thread of the same form cut on the inside of the said nut, to prevent the mandrel from feeding down too fast in the act of boring, and also to allow the mandrel to be moved up and down at pleasure, in the manner substantially as described.

Third, I claim the mode of fastening the cutter to the mandrel, by passing it through the slot or eye of the nut or cutter box, formed with an interior thread to fit on to the screw-pin of the mandrel, whereby by screwing the nut the end of the mandrel is made to retain the cutter firmly in its proper position for boring. In connection with this arrangement for setting and securing the cutting tool. I claim the cutter box formed with the projection, whereby by raising it (the box) until it comes in contact with the shoulders formed by the braces the cutter can be screwed and unscrewed, without a wrench, as herein fully set forth.

To Wm. E. Nichols, of East Haddam, Conn., for improvement in machinery for making Cord.

What I claim is, first, revolving the bobbin frames on their own axes to twist the strands, at the same time that they are carried round a common centre to twist the cord, by rolling them on the surface of a stationary annular inclined track towards the inner or outer periphery, of which they can be adjusted to run, so as to vary the relative twist of the strands, and cord, substantially as herein set forth; but I make no claim to the mere turning of the bobbin frames by friction, or by any of the devices usually employed for similar purposes.

Second, I claim the construction and arrangement of the central stem or spindle of the of the bobbin frame, operating substantially as herein set forth, whereby the yarns are collectively subjected to progressively increasing tension and twist from the commencement to the end of the process of laying them into the stand, whereby the latter is rendered smooth and regular in its figure, and of uniform density and strength, and subjected to uniform tension while being lain into the cord.

To Gibson North of Philadelphia, Pa., for improvement in making Tin-boilers for Cooking Stoves, with cast iron bottoms.

What I claim is making the bottoms of cast iron, and the bodies of tin, the two being soldered together, substantially as described.

To J. Parsons Owen, of Norwalk, Ohio, for improvement in Bedstead Fastenings.

What I claim is a bedstead fastening, consisting of a box formed of two parts, having screw threads therein, and divided through the centre longitudinally in the plane of the axis of said screws, as described and represented, said parts being so formed by locks as when inserted into a bed post, to have both parts firmly held in place against the force of the screw.

To Alonzo D. Perry, New York, N. Y., for improvement in faucet-breech guns.

What I claim is in combination with a vibrating breech turning within a chamber, the making of a groove or grooves in the inner periphery of the chamber and extending out at the side or sides thereof for the purpose and in the manner, substantially as herein described. I also claim the revolving charge holder located in the breech of the stock, substantially in the manner and for the purpose specified; and finally I claim the combination of the levers, (two), by means of which one charge only is permitted to fall forward at a time when the muzzle of the gun is depressed and by which it is forced home into the vibrating breech, as scribed.

To Harvey W. Sabin, of Reed's Corners, N. Y., for improved apparatus for drawing water from wells.

What I claim is the mounting of the respective parts of the drawing apparatus upon the rotating disc, when the said disc is placed upon and supported by the circular platform which has the grooves formed in its face and the notched ears, rising from its periphery, they are combined and operate with the drawing apparatus, substantially in the manner and for the purpose as herein represented and described.

To Albert G. Safford, of Boston, Mass., for improvements in self-acting car-couplings.

I lay no claim to the combination of a tumbler cylinder or roller, a catch hook, a coupling bar and box, as combined, constructed, and alledged to have been invented by A. G. Heckrotte, of Washington, D. C., the same being described in a paper termed the "Scientific American," published in New York or Washington, on the 29th of January, 1848. Nor do I claim the combination of a hook box and coupling link, as described in the application for a patent which Daniel R. Pratt, of Worcester, has lately made to the Commissioner of Patents, at Washington, and as lately patented by him in England, but what I do claim as my invention, is the revolving series of arms (four) and the link constructed with an opening or cross bar at one or each of its ends in combination with the box and pall, all substantially as above specified.

To David Vaughan, of Remsen, N. Y., for improvement in machinery for jointing Staves.

I claim the plane stock of the jointer formed with a depression in the middle for the purpose of guiding the shaving plane to shave the exact taper on the stave, from the bilge on the middle to the end of the stave, in the manner herein described, in combination with the mode of producing a transverse taper or feather of any angle on the edge of the stave, according to the diameter of the cask or barrel, by the stave being held to the action of the shaving knife, by the plane stock, and the clamp with the guide rail, in the manner herein represented and described.

To Joseph Vaughan, Jr., of Union, Me., for improved machine for grinding or polishing tools.

What I claim is, first, that part of the above described machinery by which an axle or other implement to be polished, receives a reciprocating motion and by which that motion is regulated with that part of the machinery by which it is made to cant or rotate at the same time, sufficiently to present all parts of the surface to be polished to the polishing wheel.

Second, The machinery above described for holding and giving motion to the axle or other implement, while being polished, in combination with the polishing wheel moved and kept in motion in the manner described in the above specification.

To H. A. Wills, of Keesville, N. Y., for improvements in operating the hammers of spike machines.

What I claim is, first, the combination of advancing and receding hammers, with their respective adjustable wipers and hinged brays, arranged and operating substantially as herein set forth.

Second, I claim the adjustable wipers, which can be set to cause the hammers to form spikes pointed more or less sharp.

Third, I claim drawing the pointing hammer of a spike or nail machine along the rod, substantially in the manner herein set forth, during the operation of forming the point.

DESIGNS.

To Joseph G. Lamb and Conrad Harris, of Cincinnati, Ohio, for Design for Stoves.

We claim the combination and arrangement of the above represented and described mouldings, panelings and configurations into an ornamental Design for Premium Cooking Stoves, and to be known and called as "Lamb and Harris' Patent Ohio Premium.

ADDITIONAL IMPROVEMENTS.

To Joseph W. Briggs of Cleveland, Ohio, for improvement in Harness Saddles. Patented June 12th, 1849. Improvement added Dec. 11th, 1849.

What I claim is a flexible pad rigidly connected with the saddle tree, substantially in the manner herein set forth.

Wonders of the Telegraph.

We were present a few evenings ago, say the National Intelligencer, at the coast survey astronomical station, on Capitol Hill, which was put in telegraphic connection with Cincinnati, for the purpose of determining the longitude between the two places. The electrical clocks in this city and Cincinnati having been introduced into the completed circuit, every beat at Cincinnati was recorded at almost the same instant on Saxton's revolving cylinder in this city, and every beat of the clock here was recorded in like manner upon Mitchell's revolving plate at Cincinnati. At the moment a star passed the meridian at Washington, by the touch of a key the record of the passage was made upon the disk at Cincinnati, as well as upon the cylinder at the Washington station, and the difference of the time of the two clocks would of course indicate the difference of longitude.

The distance between the two cities, it must be recollected, is upward of 500 miles; this distance was annihiliated, and events happening at the one, were instantly recorded by automatic machinery at the other. The interchange of star signals was soon interrupted however, by the intervention of a cloud at Cincinnati, and the remainder of the evening was occupied by the gentlemen present in a philosophical discussion on the subject of the velocity and transmission of electricity. We were never more impressed with the powers of the telegraph to annihilate space, and to bring into instant mental communication individuals separated by hundreds of miles.

Salines in Onondaga.

The State Superintendent of the Salines of Onondaga, in a letter of November 26th, says: "We have manufactured this year very near five million bushels of salt already, and shall exceed that figure somewhat at the close of the year, say 300,000 bushels over last year. (The bushel is reckoned at 26 lbs.) In regard to the consumption of fuel, I cannot say much that will be new to you. No improvement has been made, perhaps, since you were here."

The importance of these Salines may be inferred from the fact, that in the year 1836 the whole import of salt into the ports of the United States amounted to 5,088,666 bushels, of 56 lbs. each, being but a trifle more than this year's production of the Salines of Onondaga.

My correspondent, in speaking of the use of Anthracite coal, as fuel for making salt, says the experiment has not been successful, and that the gentleman who made the trial has since substituted wood for coal; and he adds, "one thing, however is certain, he makes more salt per day with wood, than he did with coal." Heretofore one cord of wood was used in making forty bushels of salt. At that rate, 125,000 cords of wood are required for the evaporation of brine for 5,000,000 bushels of salt. About forty gallons of brine make a bushel of salt, therefore requiring two hundred millions of gallons of brine to be raised from the wells, to produce the quantity. By the Salometer, the brine tests about 74°—0 being the mark for fresh water, and 100° for brine of full saturation.

From very minute and extensive examinations of the Salines of Onondaga, and from my own experience in the evaporation of fluids by heat, my opinion is clear, that 25,000 cords of wood may be made to do the work heretofore performed by 125,000 cords.

[In our opinion the anthracite coal has not been fairly tested. The same opinion as that expressed above was used against the coal by engineers on our river boats, when first tried, but they all use coal now, make quicker trips, and with a great saving in the expense of fuel.

Never be weary in well doing.

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TO CORRESPONDENTS.

"B. L., of Iowa."—Four numbers of Ranlett were sent according to your directions, on the 12th inst. $2 received.

"W. B. R., of Ohio."—We have not yet published any thing upon the subject you refer to, but may do so before long. $1 received and credited to E. & R.

"H. W., of Ohio."—Would recommend you to buy Minifie's Mechanical Drawing Book. Cannot furnish you with a good practical work upon mill wrighting. No. 10 sent.

"J. P., of Pa."—We did not transact your business, and therefore could not have acknowled the receipt of it, or the money. If we understand right you forwarded the papers direct to the Patent Office.

"A. B. C., of S. C."—We see no difference between the axiom you lay down and the one quoted—it is only a different way to express the same thing. Scofield expresses it as you have. Upon a more extended consideration you will, we have no doubt, change your opinions.

"C. S. H., of Pa."—Your box has been received, and the expenses are all O. K. If you will give us the particulars in regard to its shipment, we will attend to it promptly. Z. Knapp, of Pittstown, Pa., has a very good method of making wire fence. We may take occasion to give some instructions in regard to this subject.

"C. A., of Me."—We are not prepared to say how much the patent right of a perpetual motion for this State would be worth, having never paid any considerable attention to the sale of rights. Much depends upon its value as an operator. We give it as our opinion, however, in advance, that your ideas in regard to it are founded in error, but shall be glad to hear of your success.

"F. A. S., of Wisconsin."—Your letter containing $5 reached us safe, and the amount has been placed to your credit, which balances the account.

"J. M. B., of N. Y."—Your model and funds have been received, and the business will be attended to as soon as possible.

"R. F. B., of Geo."—Your views are very correct with the exception of the second clause—by striking that out you will have no difficulty in accomplishing all you intend to.

"Mrs. D., of N. Y."—Your favor of the 10th has been received, and all the requests attended to. We cannot now say what time you may expect to hear from your business, but we hope before long. Your name is substantially on the model, and every thing is correct now so far as we can make it.

"A. A., of Md."—We are not able to get a clear understanding of your invention from the drawings furnished, therefore we will not venture an opinion. If your pump is a good one, your proposition should meet with favor from some of your friends: we cannot engage in it.

"S. F., of Worcester."—Your subscription was paid by some person for six months, and we presume Mr. S. was the man.

"J. C. O., of N. Y."—Will attend to your request at an early date.

"G. W. C., of N. Y."—We are of the opinion, from experiments that have been made in furnaces, that a small jet of steam would be an injury in point of ultimate economy. The pipes would soon be injured materially.

"J. C. R., of Pa."—There is no such work published as you refer to, the information can only be obtained from the department.

"D. C. B., of N. Y."—Your subscription expires with No. 47, of the present volume. B. B. J.'s name entered for 6 months, as per your request, and the balance placed to your credit.

"T. I. N., of Ala."—We have entered your name for 6 months subscription to the S. A., and will forward the "Pictorial Brother Jonathans," as soon as they are issued which will be in about one week from this time.

"N. B., of N. Y."—We are unable to obtain a clear understanding of your improved plough from the imperfect sketch furnished by you.—We advise that you construct a small model and forward it for examination.

"O. H. P. W., of Ala."—Yours of the 7th, will meet early attention.

"R. S., of Ct."—Your Ideas of a "duster" are entirely new to us. We should think you had hit upon a very unique contrivance.

"H. A. S., of Vt."—We understand you perfectly well. The 1st. proposition is good, but very old. The 2d, is old and impracticable.

"J. M. B., and W. P., of N. Y."—Your models have been received and will be attended to as soon as we can get to them.

"S. J. L., of Ala."—Your favor of the 5th containing, $3, has been received and the amount placed to your credit. We cannot supply you with Vol. 3, of the "Sci. Am." No. 34, Vol., 4, is also out. Having never seen Mr. F.'s invention we are unable to give you its distinguishing features. Still we are firm in our opinion that you need not fear using yours.

"J. C. M., of Mich."—We should like to know what new and useful results are produced by your plan for operating a mortising chisel. The principles as exhibited in the drawings may be new, but we are at a loss to discover wherein it can be made to operate advantageously. We require more light on that point.

"A. M. H., of Ct."—Your letter has been received, and placed in the hands of proper persons for attention.

"J. S., of Mich."—Your papers have been forwarded to the Patent Office, and will come up for examination, in their order. We cannot tell exactly when. There could be no safety in running cars on railroads at the rate of 120 miles per hour, unless the gauge was very broad and the road perfectly straight, even under those circumstances, very few persons would risk themselves at such a fearful speed. It has beeen stated that cars have been run in England 100 miles per hour, but we think 1 mile per minute, sufficiently fast for every and all purposes.

W. N. C., of Conn.; A. A. H., of Pa.; J.R., of N. Y.; J. P., of N. Y., and W. S. T., of Me.

The specifications and drawings of your several inventions have been forwarded to the Patent Office since our last issue.

Money received on account of Patent Office business, since Dec. 12, 1849:—

G. & G. of N. Y., $30; I. A. A., of N. Y., $20, C, A. & Co, $20; W. P., of N. Y., $30; J. M. B., of N. Y., $30; J. I., of N. Y., $20; J. R., of N. Y., $20; W. N. C., of Ct., $55; F. N. S., of Ga., $50; C. S. F., of Pa., $40, W. Z. G., of Vt., $15, and D. J., of Mass., $20.

Back Volumes.

We are no longer able to supply Vols. 1, 2 and 3 of the Scientific American. We have on hand about 50 copies of the 4th, Volume bound, price $2,75, if any of our subscribers are intending to order a copy, they had better do so without delay.

ADVERTISEMENTS.

Patent Office.

128 FULTON ST.

NOTICE TO INVENTORS.—Inventors and others requiring protection by United States Letters Patent, are informed that all business relating to the procuration of letters patent, or filing caveats, is transacted at the Scientific American Office, with the utmost economy and despatch. Drawings of all kinds executed on the most reasonable terms Messrs. Munn & Co. can be consulted at all times in regard to Patent business, at their office, and such advice rendered as will enable inventors to adopt the safest means for securing their rights.

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Windsor Chairs, Legs and Pillars,	1000 per	11 hours.
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Also various other work in the same ratio. It will turn smooth over swells or depressions of three-quarters to the inch. The Eccentric Lathe will do work as fast and better than any other machine, and are sold without frames for the low price of $25—boxed and shipped. Address, (post paid) MUNN & CO.
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Raleigh, N. C. - -	W. WHITE, JUN.
Springfield, Mass. - -	M. BESSEY.
" " - -	A. HAWLEY.
Salem, Mass. - - -	L. CHANDLER.
Southport. Wis. - -	J. S. BRADLEY.
Savannah Geo. - -	JOHN CARRUTHERS.
Syracuse, N. Y. - -	W. L. PALMER.
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Among other features of our paper, worthy of note, may be mentioned the department for Farmers, in which origiual articles appear weekly from the best agricultural writers in New England; the Financial and Business department, under the direction of an accomplished financial writer; the Markets, which we report with more than usual fullness; the Shipping List, into which we condense with grear care, all marine intelligence of interest, to New England readers; the News Department, to which careful attention is devoted; besides which is given early intelligence of all new inventions, and discoveries, sketches of travel, historical, biographical and scientific articles, Sunday readings, puzzles, enigmas and problems, humorous sketches, and everything else that can benefit or interest the ordinary reader. The Illustrations will be continued weekly, and an entirely new field of embellishments will be entered upon.

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Scientific Museum.

Experiment In Gunnery Engineering.

A short time ago experiments were made at Woolwich, England, when quite dark by Captain Boxer, Royal Artillery, in the presence of Lord Hay and a number of Naval Officers.—They were made with 8 inch carcasses used for firing to show the positions of an enemy in a dark night. The first fired was one of the carcasses from an 8-inch mortar, and it fell to the ground at the distance of between 200 and 300 yards, and continued burning about ten minutes. One of the cases containing Captain Boxer's plan was then fired. It consists of two tin cases, each being half a sphere ; the one containing the composition, which burns with a brilliant blue light, and the other the parachute, formed of a light description of closely woven bunting. The diameter of the cases appeared to be about five inches, and when fired they attained a considerable altitude, but the parachute did not in the first instance open out sufficiently, and the lighted composition soon fell to the ground.

The second fired on Captain Boxer's plan was a beautiful spectacle, the shells ascended to a great altitude, and when at the highest point an explosion took place, similiar to the bursting of a rocket in the air, and out came a parachute fully six feet in diameter and about three feet in depth, suspending the brilliant blue light, and gradually descending, illuminating the part of the common on which it descended with a brilliant light. The third and fourth—all that were fired on Captain Boxer's principle—were equally successful, and all appeared much gratified with the result.—Three other carcasses were fired from the 8-inch mortar with a similiar effect to the first but although they gave out flame for a considerable time, they appeared to burn dim compared with Captain Boxer's. The parachute which supports the burning composition, on Captain Boxer's plan, is about from seven to eight feet above the burning matter ; six cords descending from it are attached to a small chain about a foot long, fixed to the composition shell.

Silk-Worms.

Among the memoirs submitted to the Academy of Sciences at Paris, on the 5th of November, the correspondent of the New York Journal of Commerce cities M. Guerin-Menneville's "Studies on the Diseases of Silk-worms"—a subject which will, hereafter, be of considerable consequence in the United States. The author commences in these terms :

"This year my researches on silk-worms, diseased and healthy, have led me to the observation of exceedingly curious facts, under scientific and agricultural points of view. I believe that I have witnessed the transformation of the living elementary animal substance into a vegetable ; for, I have seen certain corpuscules forming the living and internal portion of the globules of the blood of the silk-worms, become the roots of *Botrytis bassiana*, of that inferior vegetable which constitutes the diseases known by the name of *muscardine*. The history of these phenomena would appear improbable, if we were not already acquainted with something analogous in nature ; but the fine discoveries of M. Decaisne, relative to the animated globules which escapes from certain *fucus* (an extensive genus of cryptogramic plants) and which he has designated by the name *zoospores*—the knowledge which we have of the faculty possessed by the *Endochrames* or *gnomic* substance of the elementary cellules of certain plants, to move like animals—and the history of those very singular vegetables, the Protoccus, of Mr. Montagne, which enjoy either animal or vegetable life at different periods of their lives, show that the phenomena which I have observed are no longer miraculous, and that analogies for them exist among the lower vegetables."

The general conclusion of M. Menneville, from his studies, is, that it may be ascertained no inconsiderable time beforehand, from nice examination of the blood of silk-worms, whether they be in good health, or sick.

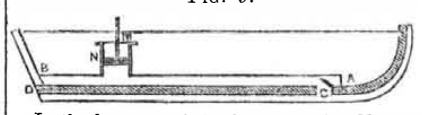
History of Propellers and Steam Navigation.

[Continued from page 101.]

EXTRA CHAPTER ON RUMSEY AND FITCH.

Rumsey's plan for propelling was entirely different from that of John Fitch, as will be perceived from the following description of his boat, and it may be interesting for many to know that since the days of Rumsey his invention has been frequently revived. It is not many weeks since experiments to propel a vessel by water forced in nearly the same way, out of the stern, were made in this city, and in 1847 we witnessed a like attempt, only two water pipes were used and two horizontal pumps. It is only two years since a patent was secured at Washington by a gentleman in Baltimore, (Mr. Fulton) for some principle connected with propelling by water, which is described on page 316, Vol. 2, Scientific American, but since that time we have heard no more about it. We will therefore describe the first invention for propelling boats by steam power, forcing a jet of water out towards the stern of the vessel.

FIG. 9.



In the bottom of the boat, on the Kelson, A, there is a trunk, B, the after end of which is open, and terminates at the stern post, D ; the other end is closed, and the whole trunk, according to its dimensions, occupies about three fourth parts of the length of the boat.—On the closed end of the trunk stands a cylinder, N, two and a half feet—from this cylinder, there is a communication by a tube to the rivet or water under the boat, by the valve, C, to admit the water from the river into the cylinder, and it likewise prevents it from return-again the same way. There is another communication which lets water pass freely from the cylinder to the trunk, through which it is discharged by the stern ; on the top of this cylinder there stands another of the same length, which is fixed to the under one by screws ; in each of these cylinders there is a piston, which moves up and down with very little friction ; these pistons are connected together by a smooth bolt, M, passing through the bottom of the upper cylinder, acts as a pump which draws water from the river through the tube and valve, before described. The upper cylinder acts as a steam engine, and receives its steam from a boiler under its piston, which is then carried up to the top of the cylinder by the steam (at the same time, the piston of the lower cylinder is brought up to its top, from its connection with the upper piston, by the aforesaid bolt,) they then shut the communication from the boiler, and open another to discharge the steam for condensation ; by this means the atmosphere acts upon the piston of the upper cylinder and its force is conveyed to the piston in the lower cylinder, by the aforesaid connecting bolt, which forces the water, then in the lower cylinder, through the trunk, with considerable velocity ; the re-action of which, on the other end of the trunk, is the power that propels the boat forward.

It is well known that a heavy body falling near the earth will pass through a space of about fifteen feet in the first second of time ; if the same body was acted upon in a horizontal direction, by an impulse equal to its weight, it would move in that direction the same distance in an equal time ; it follows, then that the water in the trunk, will have the effect proportionable to its weight, of retarding the water from being discharged from the cylinder in too short a time.

Near the cylinder, on the top of the trunk, there is a valve to admit air, which follows the water that is then in motion, and gives time for the water to rise gradually into the trunk through valves, at its bottom, for that purpose ; this water has but little motion with respect to the boat and is therefore capable of resisting the next stroke of the engine.

John Fitch and James Rumsey were no great friends to one another. Rumsey published a pamphlet in Philadelphia, May 7th, 1788, wherein he denounced Fitch in no measured terms—using expressions towards him as plain as to say that he, Fitch, got his idea of a steamboat from a Capt. Bedinger, who described Rumsey's boat to Fitch. Rumsey published a number of affidavits to prove that he was the original inventor of the steamboat, and among the rest a letter of General Washington's, to prove that he had spoken to him of employing steam as a prime mover. Fitch's pamphlet is very rare, but there is one in the New York Society Library, in Vol. 82 of pamphlets, which will be found in the second Vol. of the forthcoming New York Documentary History, mentioned in our last.

Three days after Mr. Rumsey published his pamphlet, John Fitch published an answer to it, which pamphlet, if it came from the pen of John Fitch, gives evidence of a mind skilled in metaphysics, ingenious in detecting the weak points of his opponent's argument, and skillful in making a capital specious plea.—Fitch admits that neither himself nor Rumsey were the first who suggested the idea of propelling vessels by steam, but that he was the first who matured the idea, constructed a model, and made the actual experiment. This was, he says, "about the middle of April, 1785." Rumsey claimed to have matured his plan in 1784.

As the plans of both Rumsey and Fitch were different from those employed at the present day, we have exhibited their inventions, and all that can be justly claimed for them is, that they were modifications of the manner of applying steam to propel boats, but neither Fitch nor Rumsey were the first who actually made the experiments of applying steam power to propel vessels. Fitch undoubtedly thought he was, and said he was, and so did Rumsey, but we have shown that Jonathan Hulls took out a patent for the application of steam to propel boats, forty-eight years before Fitch or Rumsey (by their own admissions) thought upon the subject.

It is needless for us to go into the controversial points of the original merits of these two inventors. We look upon them both as very ingenious men, and Rumsey as possessing as much original genius as Fitch, for he got patents for other inventions beside his steamboat. Rumsey was the original inventor of propelling boats by steam power driving a jet of water out of the stern, and Fitch that of using his very ingenious combination of paddles, and beside he has a good claim to the paddle wheels. It is stated that John Bernouli, the famous mathematician, suggested the idea (first) of propelling a vessel by the re-action of the water, but we have no evidence that he ever matured his *idea*. Rumsey's claims are not weakened by those of Bernouli.

Colors on Flowers.

The petals of flowers do not owe their beauty to the colors which paint them, neither do they owe their brilliancy to the skin which covers them. When the colors are drawn off they are dull and dead in appearance. But in the *pabulum* of the flower there are minute bubbles of water, and these receiving the rays of light, refract the rays in every drop, which strike to the focus underneath, thus brightening each petal with the light and beauty of reflection and refraction. But were it not for another provision, the whole flower at times would be one blaze of light, but the petal is covered with an upper and under skin, which curtails the water drops diamond-like rays, and thus clothes them with a variegated drapery, illuminated with the pencil of old *Sol* himself.

Honey.

Honey is, according to Mr. Milton, who has lately published a treatise on bees in England, a universal specific ; and among its other valuable properties he declares that it prevents consumption, and states that that destroyer of human life is not known in countries where honey is regularly taken as an article of food. Those who have less faith in the specific, may perhaps attribute the cause to difference of climate rather than to honey. The Italian singers, it is said, are greatly indebted to honey ; but their practice is to sharpen it with a few drops of acid, though they sometimes take it in a pure state.

Rice has been raised in the plains of Cazeauz, France, at the rate of 37 bushels to the acre.

LITERARY NOTICES.

It is really astonishing to observe the wonderful improvements that are yearly made in our monthly Literary Magazines : each publisher seems determined not to be superseded by his cotemporaries, either in quality or quantity. The January number of SARTAIN'S UNION MAGAZINE OF LITERATURE AND ART appears upon our table, having 104 pages—33 embellishments and 44 original contributions, forming in itself a perfect annual. The artistic skill employed by the enterprizing publishers of this splendid work is unequalled by any in the world. Among the host of contributors announced for the coming volume, we notice the names of the Rev. Dr. Bethune, Rev. Dr. Todd, Rev. Dr. Durbin, Longfellow, Lowell, Arthur, Mrs. Osgood, Mrs. Kirkland, and Mrs. Sigourney. Messrs. Dewitt & Davenport, Tribune Buildings, are agents for this city. Terms $3 per annum.

The December No. of the PICTORIAL NATIONAL LIBRARY has been received, and we regret to announce that the publishers deem it advisable to suspend its publication with this number. So good a work should not be allowed to pass out of existence.

The January number of GRAHAM'S AMERICAN MAGAZINE has appeared upon our table, and in justice to its publishers we must say that it exceeds in richness any other Magazine published in America. Godey must look out sharp or his hitherto unrivalled "Book" will stand second on the list—Graham bearing the palm. W. H. Graham, Agent, Brick Church, New York.

Messrs. Stringer & Townsend have just issued two highly interesting romances, entitled "Miranda," a Tale of the French Revolution ; by the author of the "Trapper's Bride ;"—price 50 cts.: and also "The Golden Calf, or Prodigality and Speculation in the Nineteenth Century ;" price 25 cts. This work, although coming under the title of a novel, conveys with it a powerful moral, from which all can derive a salutary lesson.

THE OHIO CULTIVATOR.—This semi-monthly, at $1 per year, commences its Sixth Volume next month. It is published at Columbus, Ohio, and it says a great deal, even for the first Agricultural State in the Union, to produce such an excellent periodical.

GENESEE FARMER.—This excellent monthly periodical commences its new volume on the 1st of January, 1850. It is one of the cheapest publications in the world. It is a good Agricultural Magazine, and receives a deserved support of 20,000 subscribers. It is published at Rochester, N. Y.

It is quite a curiosity to observe the activity of our enterprizing publishers, in their efforts to supply the usual demand for holiday gift books. Messrs. Stringer & Townsend have just issued, in appropriate form "Christmas Shadows," a Tale of the Poor Needle Woman, with numerous steel illustrations and fine letter press.

No. 2 of the PULPIT REPORTER has made its appearance, containing several sermons from distinguished divines. For sale at 128 Fulton street, by Holbrook, Buckingham & Co.

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